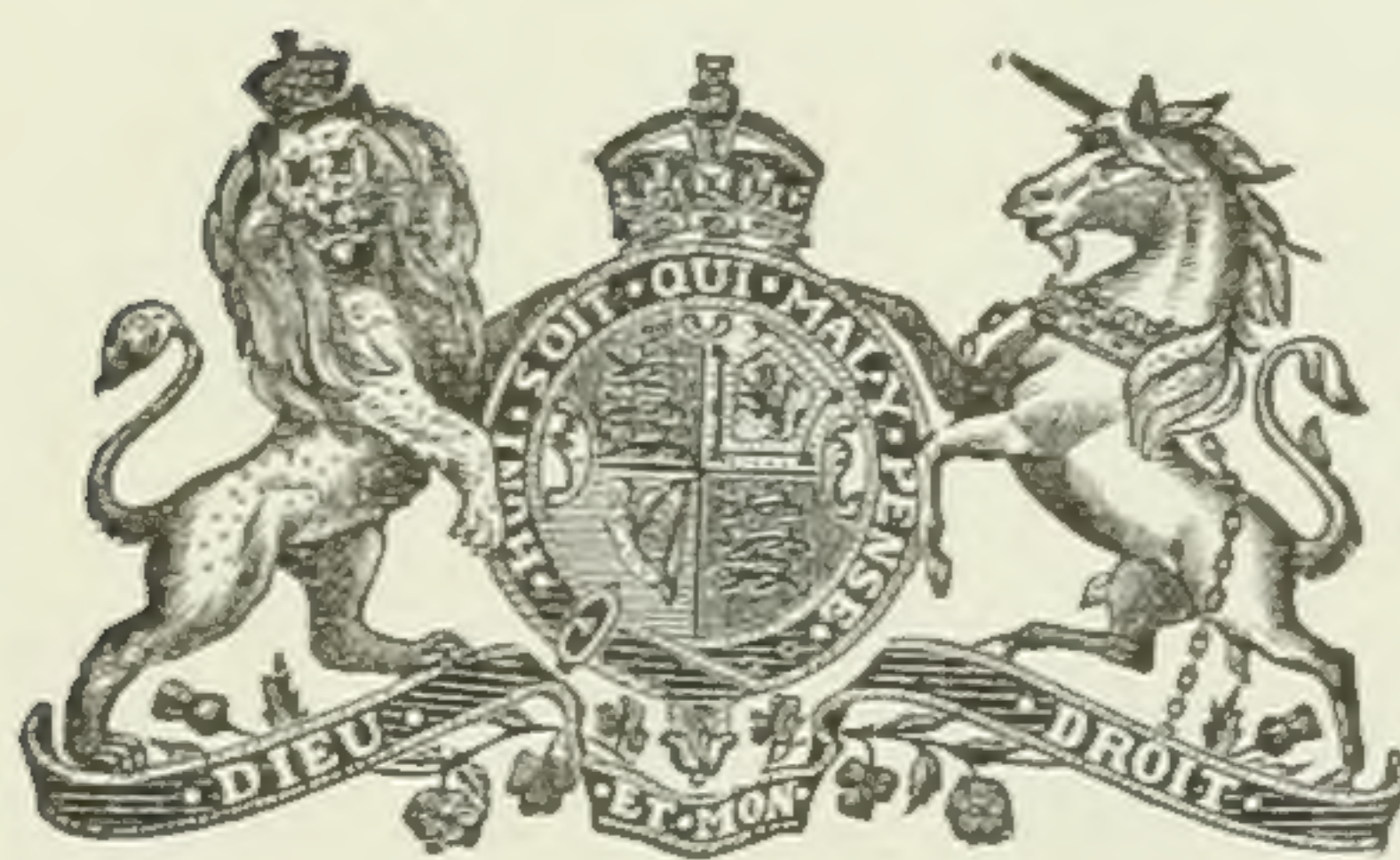


REPORT  
ON THE  
WOOLLEN INDUSTRY IN GREAT BRITAIN

BY  
THOMAS COSTELLO  
SPECIAL OFFICER OF CUSTOMS

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1909







REPORT  
ON THE  
WOOLLEN INDUSTRY IN GREAT BRITAIN

BRADFORD, YORKSHIRE, Oct. 20, 1908.

JOHN McDUGALD, Esq.,  
Commissioner of Customs,  
Ottawa, Canada.

SIR,—Enclosed herewith is a complete list of wages that are now being paid in the districts of Bradford, Leeds and Huddersfield, to operatives in the manufacturing of woollens and worsteds when paid by the day and week—schedules of prices for the different processes when done by commission combers and spinners, and also by piece workers, together with several estimates showing the ratio that labour bears to materials and fixed charges from actual results as procured from different manufacturers.

WOOLLENS.

		Per week.
<i>Wool Scouring and Dyeing—</i>		
Boss dyers.....	£2 10s. and upwards.	\$ 12 16
Men.....	£1 1s. 3d.	5 16
<i>Rag Department—</i>		
Foreman puller.....	£1 15s.	8 81
Feeders of machines.....	£1	4 87
Packers.....	£1 1s.	5 11
Minders of machines.....	14s. to 16s.	3 40 to \$3 89
<i>Scribbling and Carding—</i>		
Head carder (10 set).....	£3 to £3 10s.	14 60 to \$17 04
Fettlers.....	£1 5s.	6 09
Willeyers.....	£1 5s.	6 09
Fillers, two machines.....	16s. to 18s.	3 90 to \$4 30
Fillers, learners.....	15s.	3 65
Women and girls.....	13s. to 15s.	3 16 to \$3 65
Men.....	£1 to £1 5s.	4 87 to \$6 08
<i>Spinning—</i>		
Overlooker.....	£2	9 73
Men.....	£1 to £1 10s.	6 08 to \$7 39
Boys, piecers.....	12s. to 14s.	2 92 to \$3 40
Girls ".....	10s. to 11s.	2 43 to \$2 68

COMBING AND SPINNING PROCESSES, WORSTEDS.

<i>English Long Wools—</i>		
Combing manager.....	£3 10s.	\$17 03
Wool washers.....	£1 3s.	5 58
Makers up.....	£1 2s.	5 34
Combers.....	16s. 6d.	4 00
Minders for preparers.....	14s. to 17s.	3 33 to \$4 05
Minders for combs and finishers.....	14s. to 15s.	3 40 to \$3 65
Minders (night turn men).....	£1 to £1 2s.	4 86 to \$5 34
Gill box minders.....	13s.	3 16
Gill jobbers.....	£1 1s.	5 10



8-9 EDWARD VII., A. 1909

*Botany or Merino Wools (Combing Continued)—*

		Per week.
Combing manager.....	£3 10s.	17 03
Carding overlooker.....	£3	14 60
Feeders.....	16s. 7d. to 17s.	3 89 to \$4 13
Fettlers.....	19s. to £1	4 62 to \$4 86
Takers off.....	15s.	3 65
Combers.....	16s. 6d.	4 01
Finishing top. . . . .	14s. to 15s.	3 40 to \$3 65

## BOTANY AND MERINO WOOLS.

*Spinning—*

Overlooker.....	£2	\$9 73
Under spinners.....	£1 2s. to £1 4s.	5 34 to \$5 83
Doffers (boys).....	9s. 6d. to 10s.	2 19 to \$2 43
" (girls).....	8s. 6d. to 10s.	2 06 to \$2 43
Half timers, boys or girls.....	4s. to 5s.	0 97 to \$1 22

## WOOLLENS AND WORSTEDS.

*Warp Dressing and Twisting.*

Boss warper.. . . .	£1 14s. to £1 16s.	\$8 27 to \$8 77
Men.....	£1 10s.	7 39
Women.....	12s. to 17s.	2 92 to \$4 13
Boys (half time).....	5s.	1 21
Twisters (women).....	15s.	3 65
" (girls).....	9s. 6d.	2 31
Sleying.....	13s. to 17s.	3 16 to \$4 13
Girls (tying in) . . . . .	10s.	2 43
Men (beaming).....	£1 8s.	6 81

*Weaving.*

Overlooker. . . . .	£2 10s. to £2 15s.	12 16 to \$13 38
Men turners or loom fixers.....	£1 10s.	7 30
Assistant men turners.....	£1 to £1 6s.	4 87 to \$6 33
Women and girls. . . . .	13s. to 18s.	3 16 to \$4 38
Men.....	£1 6s. 9d.	6 50

*Burling.*

Burling examining.....	£1 1s.	5 11
Young women and girls . . . . .	13s. 6d. to 14s. 6d.	3 28 to \$3 52
Mending (women).....	11s. to 15s.	2 68 to \$3 65

*Milling and Tentering.*

Head miller.....	£1 15s.	8 52
Scourers.....	£1 5s. 1d.	6 09
Men, tentering and helping.....	£1 2s. to £1 4s.	5 36 to \$5 84
Boys.....	10s.	2 43

*Finishing Processes.*

Boss gigger.....	£1 15s.	8 52
Gig men.....	£1 5s.	4 96
Other men.....	18s.	4 38

*Dry Processes.*

Overlooker: . . . . .	£1 15s. to £2.	8 52 to \$9 73
Cutting (men) or shearing.....	£1 5s. 1d.	6 09
Boys.....	10s. to 12s.	2 43 to \$2 92
Pressing (men).....	£1 10s. to £1 15s.	7 30 to \$8 52

*Mechanics.*

Men.....	£1 14s.	8 26
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*General Mill Hands.*

Men.....	18s. to 20s.	4 38 to \$4 87
Women.....	13s. to 17s.	3 16 to \$4 13

## BRADFORD DRESS GOODS.

Dressers (men).....	£1 10s. to £1 14s.	\$7 39 to \$8 26
Twisters and beamers.....	£1 8s. to £1 10s.	6 81 to \$7 39
Overlookers.....	£1 16s.	8 75
Weavers (women and girls).....	14s. to 17s.	3 40 to \$4 13
Burlers " " . . . . .	13s. 6d. to 14s. 6d.	3 28 to \$3 52



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BLANKET MILLS.

		Per week.
Men.....	£1 2s. to £1 6s.	\$5 36 to \$6 33
Women.....	12s. to 15s.	2 92 to \$3 65
Boys (over 15).....	9s. to 12s.	2 19 to \$2 92

PIECE WORK.

WOOL SORTING IN BRADFORD.

*Merino*, which in most cases only means removing britch, etc., 1s. per pack of 240 lbs.  
*Clothing*, or Cross Breds sorted for 32s, 36s, 40s, 46s. and 50s, 1s. 3d. to 1s. 6d. per pack of 240 lbs.  
*English Wool*—3s. to 5s. 6d. per pack of 240 lbs.  
*Mohair* (Turkey)—9s. 6d. per pack of 240 lbs.  
*Mohair* (Cape)—5s. 6d. per pack of 240 lbs.  
*Men* working at above scale of prices earn from 28s. to 30s. per week.

WOOLLENS.

Apprentices work for first year at 10s. per week.  
" " second year on above scale less ¼, and then make on an average 18s. per week.

MAKING OF SHODDY (Contract work).

Pulling rags or converting (per pack of 240 lbs.) ....	5s.
Requiring 4 gallons of oil at 1s. per gallon.....	4s.
240 lbs. cost 108d. or less than ½d. per lb. ....	9s.

CARDING AND SPINNING (Contract work).

6 skeins yarn of 16 yards each = 96 yards per ounce Weft, cost 1d. per lb.  
7½ skeins, 120 yards per ounce Weft cost 1¼d. per lb.  
2 to 3 skeins, Weft cost ⅝ 1d. per lb.  
8 skeins cost 8d. per whartern of 6 lbs. or 1⅓d. per lb.  
From 8 skeins to 16 skeins up, 1d. per skein per each whartern of 6 lbs.  
From 16 skeins up, ½d. per whartern of 6 lbs.  
*Carding* might be estimated to cost ⅔ of above prices, and  
*Spinning*, ⅓ of above prices.  
*Warp*, 1d. per every 6 lbs. extra.

HUDDERSFIELD PUBLIC SPINNING AND CARDING, OCT., 1908.

WOOLLEN YARNS.

Basis of calculations—1 skein = 16 yards per ounce or 256 yds. per lb.

6 to 8 skeins, 1½d. per lb.	
9 to 11 " 1¾ " "	
12 to 13 " 2 " "	¼d. for every 2 skeins finer.
14 to 15 " 2¼ " "	¼d. extra for spinning on bobbins.
16 to 17 " 2½ " "	¼d. " warps.
18 to 19 " 2¾ " "	
20 to 21 " 3 " "	These prices do not include preparing of stock before carding, blending,
22 to 23 " 3¼ " "	picking, &c., &c.
24 to 25 " 3½ " "	
26 to 27 " 3¾ " "	
28 to 29 " 4 " "	
30 to 31 " 4¼ " "	

SPUN ON COPS.

*Piecework Spinning* alone as sometimes used in the Batley & Dewsbury District. Low woollens.  
*Weft*, 1½d. for 1 whartern, 6 lbs.  
*Warp*, 1¾d. " "  
The above is based on 96 yards to the ounce, and for every 10 yards above, such as 106 yards to the ounce, ¼d. per whartern.



WORSTEDS.

Commission, Combing and Spinning.

Combing 60s. Botany and upwards—  
6 lbs. tops to 1 lb. noils and upwards, 2d. on tops.  
5 " 1 " under 2¼d. "  
3 " 1 " " 2½d. "  
Preparing wools—  
32s, 36s and 40s :—going through gill boxes, 1d. on tops.  
44s " " 1½d. "  
Carding wools for combing—  
44s, 46s and 50s :—1½d. on tops.  
56s 1½d. "  
Skin and slipe, ⅓d. extra.  
Burry and seedy wool, ¼d. extra.  
7½ % additional should be calculated on above prices.

PRICES FOR SPINNING, AND OTHER PARTICULARS OF THE FOLLOWING TYPES OF WOOL.

Type of Wool.	Quality.	Usual Shrinkage.	Tarage Noil to Top.	Cost of Combing.	Cost of Spinning per lb.
		%		d.	d.
English Leicester. ....	40s	20	11 to 1	1	4
" Kent. ....	50s	24	10 to 1	1½	5
" Shropshire. ....	50s	25	12 to 1	1½	5
B. A. Cross Bred. ....	50s to 56s	38	10 to 1	1⅝	5 to 6
New Zealand Cross Bred. ....	40s	30	11 to 1	1¼	4
Skin Wool. ....	64s	Clo: 5	Carded.	.....	7
Australian Merino. ....	60s	50	8½ to 1	2	8½
B. A. Merino. ....	60s	50	5½ to 1	2½	6½
Cape Merino. ....	64s	62	5½ to 1	2¼	7

The above spinning prices are for greys only.  
Extras :—For colours, 5d. per lb., black ; 6d. for solid high colours ; 7d. for mixtures. Twists cost 1d. per lb. more than mixtures ; marls 2d. more than mixtures.

WOOLLENS AND WORSTEDS.

Average wage for Dressing 70 yards of warp, end to end.

Ends in warp—		
1801 to 2200 .....	2s.	6d. per 70 yards warp
2201 to 2600 .....	3s.	0d. "
2601 to 3000 .....	3s.	6d. "
3001 to 3400 .....	4s.	1d. "
3401 to 3800 .....	4s.	8d. "
3801 to 4200 .....	5s.	3d. "
4201 to 4600 .....	5s.	10d. "
4601 to 5000 .....	6s.	7d. "
5001 to 5400 .....	7s.	2d. "
5401 to 5800 .....	7s.	10d. "
5801 to 6200 .....	8s.	6d. "

Extras—For each above two colours, 3½d. per colour.  
Time work—6½d. per hour.

PRICE LIST FOR LOOMING AND TWISTING.

Twisting—		
In twisting frame .....	5d.	per 1000 ends.
" " (stripes) .....	5½d.	"
At loom .....	6d.	"
Sleying—4d. per 1000 ends.		
Looming—(Drawing in and Sleying)—		
Straight draft up to 14 shafts .....	1s. 0d.	per 1000 ends.
" 14 to 20 shafts .....	1s. 3d.	"
" over 20 shafts .....	1s. 6d.	"
All drafted styles .....	1s. 6d.	"
Jacquards .....	1s. 3d.	"
Extra rollers or beams—1s. per beam or roller.		
Time work—6d. per hour.		



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WOOLLENS AND WORSTEDS.

STANDARD WAGE LIST FOR WEAVERS.

Bradford District.

COATINGS.

Up to 84 in. reed space.      Speed, 120 to 130 picks per minute.      70 yards per warp.

		One weaver to	
		1 Loom.	2 Looms.
All weaves up to 8 shafts.....	5½d.	3¾d.	per pick per ¼-in
" " 12 " .....		"	"
<i>Extras.</i>		<i>Extra.</i>	
1. Plain drafted stripes up to 3 colours.....	¼d.	¼d.	per pick per ¼-in.
" " 4 colours or more ..	¾d.	¾d.	" "
· Cross drafter stripes up to 3 colours .....	¾d.	¾d.	" "
· " " 4 colours or more.....	1d.	1d.	" "
· Coloured weft, except where colour is paid for in the warp, as in extras 1 to 4.....	¼d.	¼d.	" "
6. Revolving boxes.....	1d.	1d.	" "
7. Skip or drop boxes .....	1½d.	1½d.	" "
8. Jacquards... ..	¾d.	¾d.	" "
9. Looms running 110 to 119 picks per minute .....	1d.	1d.	" "
		Per piece.	
10. Above 8 shafts .....		1½d.	per shaft.
11. " 12 " .....	1½d.	"	"
12. Above 80 sett .....	1d.	1d.	for each 5 setts.
13. " 2 shuttles.....	9d.	9d.	per shuttle.
14. A second beam.....	1s.	9d.	per piece.
15. Below 9 picks....	9d.	9d.	"
16. Warps shorter than 140 yards .....	1s. 6d.	1s.	for the whole warp.

DRESS GOODS, LININGS, &C., 70 YARDS WARP.

Up to and including 38 in. reed space 2d. per pick per ¼-in.

All weaves up to and including 8 shafts woven with 1 colour of warp and weft—			
Above 38 in., not exceeding 47 in. reed space.....		2½d.	per pick per ¼-in.
" 47 in. " 57 in. " .....		2½d.	" "
" 57 in. " 66 in. " .....		2½d.	" "
" 66 in. " 76 in. " .....		3¼d.	" "

HUDDERSFIELD WOOLLEN MANUFACTURERS' AND SPINNERS' ASSOCIATION.

WEAVERS' SCALE.

The following Scale for 18 strings of 10 feet per string has been compiled by the above Association.

In Shawls not more than three Shuttles will be paid for.

Up to 30 picks on Warps of only one cut long 6d. extra will be allowed.

From 30 to 60 picks      do      do      9d.      do      do

Above 60 picks      do      do      1s.

In all cases one halfpenny per string to be added for every 2 healds over 16.

Weavers working two looms will be paid 35 per cent. or 7s. in the £, less than scale.

All damages traced to negligence will be deducted.

No interference will be allowed with learners approved by the master.



MEN—LOOMS RUNNING 70 TO 80 PICKS PER MINUTE.

WHITE FACED WORSTEDS, WOOLLENS, MIXTURES, OR SOLID COLORED WORSTEDS.																
Picks.	One Beam.								Two Beams.							
	Shuttles.								Shuttles.							
	1		2		3		4		2		3		4			
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.		
9 & 10	3	6	4	0	4	6	5	3								
11 " 12	4	0	4	6	5	0	5	9								
13 " 14	4	6	5	0	5	6	6	3								
15 " 16	5	0	5	6	6	0	6	9								
17 " 18	5	6	6	0	6	6	7	3								
19 " 20	6	0	6	6	7	0	7	9								
21 " 22	6	6	7	0	7	6	8	3								
23 " 24	7	0	7	6	8	0	8	9								
25 " 26	7	6	8	0	8	6	9	3								
27 " 28	8	0	8	6	9	0	9	9								
29 " 30	8	6	9	0	9	6	10	3								
31 " 32	9	0	9	6	10	0	10	9	11	1½	11	7½	12	4½		
33 " 34	9	6	10	0	10	6	11	3	11	8½	12	3	12	11½		
35 " 36	10	0	10	6	11	0	11	9	12	3	12	9	13	6		
37 " 38	10	6	11	1½	11	9	12	8	13	1	13	8½	14	7½		
39 " 40	11	0	11	7½	12	3	13	2	13	7½	14	3	15	2		
41 " 42	11	6	12	1½	12	9	13	8	14	2½	14	10	15	9		
43 " 44	12	0	12	7½	13	3	14	2	14	9	15	4½	16	3½		
45 " 46	12	6	13	1½	13	9	14	8	15	4	15	11½	16	10½		
47 " 48	13	0	13	9	14	6	15	7½	16	1½	16	10½	18	0		
49 " 50	13	6	14	3	15	0	16	1½	16	9	17	6	18	7½		
51 " 52	14	0	14	9	15	6	16	7½	17	3	18	0	19	1½		
53 " 54	14	6	15	3	16	0	17	1½	17	10	18	7	19	8½		
55 " 56	15	0	15	9	16	6	17	7½	18	4½	19	1½	20	3		
57 " 58	15	6	16	4½	17	3	18	6½	19	2½	20	1	21	4½		
59 " 60	16	0	16	10½	17	9	19	0½	19	9	20	7½	21	11		
61 " 62	16	6	17	4½	18	3	19	6½	20	4	21	2½	22	6		
63 " 64	17	0	17	10½	18	9	20	0½	20	10½	21	9	23	0½		
65 " 66	17	6	18	4½	19	3	20	6½	21	5½	22	4	23	7½		
67 " 68	18	0	19	0	20	0	21	6	22	3	23	3	24	9		
69 " 70	18	6	19	6	20	6	22	0	22	10	23	10	25	4		
71 " 72	19	0	20	0	21	0	22	6	23	4½	24	4½	25	10½		
73 " 74	19	6	20	6	21	6	23	0	23	11½	24	11½	26	5½		
75 " 76	20	0	21	0	22	0	23	6	24	6	25	6	27	0		
77 " 78	20	6	21	7½	22	9	24	5	25	4	26	5½	28	1½		
79 " 80	21	0	22	1½	23	3	24	11	25	10½	27	0	28	8		
81 " 82	21	6	22	7½	23	9	25	5	26	5½	27	6½	29	3		
83 " 84	22	0	23	1½	24	3	24	11	27	0	28	1½	29	9½		
85 " 86	22	6	23	7½	24	9	26	5	27	7	28	8½	30	4½		
87 " 88	23	0	24	3	25	6	27	4½	28	4½	29	7½	31	6		
89 " 90	23	6	24	9	26	0	27	10½	29	0	30	2½	32	0½		
91 " 92	24	0	25	3	26	6	28	4½	29	6	30	9	32	7½		
93 " 94	24	6	25	9	27	0	28	10½	30	1	31	4	33	2½		
95 " 96	25	0	26	3	27	6	29	4½	30	8	31	11	33	9½		
97 " 98	25	6	26	10½	28	3	30	3½	31	5½	32	10	34	10½		
99 " 100	26	0	27	4½	28	9	30	9½	32	0	33	4½	35	3		



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MEN—LOOMS RUNNING 70 TO 80 PICKS PER MINUTE—*Concluded.*

Picks.			COLOURED WORSTEDS.								SINGLE WHITE WORSTEDS.															
			One Beam.								Two Beams.								One Beam.							
			Shuttles.								Shuttles.								Shuttles.							
			1		2		3		4		2		3		4		1		1							
			s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.						
40	{	31 & 32	9	6	10	0	10	6	11	4½	12	7½	13	1½	13	10½	8	6	9	0						
	{	33 " 34	10	0	10	6	11	1½	11	10½	13	2½	13	8½	14	5½	9	0	9	6						
	{	35 " 36	10	6	11	1½	11	7½	12	4¼	13	9	14	3	15	0	9	6	9	10½						
	{	37 " 38	11	1½	11	9	12	4½	13	5	14	11½	15	7	16	6	9	10½	10	6						
	{	39 " 40	11	7½	12	3	12	10	13	11	15	6	16	1½	17	0½	10	4½	11	0						
50	{	41 " 42	12	1½	12	9	13	6	14	5	16	1	16	8½	17	7½	10	10½	11	6						
	{	43 " 44	12	7½	13	4½	14	0	14	11	16	7½	17	3	18	2	14	4½	11	10½						
	{	45 " 46	13	1½	13	10½	14	6	15	5	17	2½	17	10	18	9	11	10½	12	4½						
	{	47 " 48	13	9	14	6	15	3	16	6	18	4½	19	1½	20	3	12	3	13	0						
	{	49 " 50	14	3	15	0	15	10½	17	0	19	0	19	9	20	10½	12	9	13	6						
60	{	51 " 52	14	9	15	6	16	4½	17	6	19	6	20	3	21	4½	13	3	14	0						
	{	53 " 54	15	3	16	1½	16	10½	18	0	20	1	20	10	21	11½	13	9	14	4½						
	{	55 " 56	15	9	16	7½	17	4½	18	7½	20	7½	21	4½	22	7	14	3	14	10½						
	{	57 " 58	16	4½	17	3	18	1½	19	6½	21	10	22	8½	24	0	14	7½	15	6						
	{	59 " 60	16	10½	17	9	18	9	20	0½	22	4½	23	3	24	6½	15	1½	16	0						
70	{	61 " 62	17	4½	18	3	19	3	20	6½	22	11½	23	10	25	1½	15	7½	16	6						
	{	63 " 64	17	10½	18	10½	19	9	21	2	23	6	24	4½	25	8	16	1½	16	10½						
	{	65 " 66	18	4½	19	4½	20	3	22	8	24	1	24	11½	26	3	16	7½	17	4½						
	{	67 " 68	19	0	20	0	21	0	25	7½	25	3	26	6	27	9	17	0	18	0						
	{	69 " 70	19	6	20	6	21	7½	23	1½	25	10	26	10	28	4	17	6	18	6						
80	{	71 " 72	20	0	21	0	22	1½	23	7½	26	4½	27	4½	28	10½	18	0	19	0						
	{	73 " 74	20	6	21	6	22	7½	24	3	26	11½	27	11½	29	5½	18	6	19	4						
	{	75 " 76	21	0	22	0	23	1½	24	9	27	6	28	6	30	0	19	0	19	10½						
	{	77 " 78	21	7½	22	9	24	0	25	8	28	8½	29	10	31	6	19	4½	20	6						
	{	79 " 80	22	1½	23	3	24	6	26	2	29	3	30	4½	32	0½	19	10½	21	0						
90	{	81 " 82	22	7½	23	10½	25	0	26	9½	29	10	30	11½	32	7½	20	4½	21	4½						
	{	83 " 84	23	1½	24	4¼	25	6	27	3½	30	4½	31	6	33	2	20	10½	21	10½						
	{	85 " 86	23	7½	24	10½	26	0	27	9½	30	11½	32	1	33	9	21	4½	22	4½						
	{	87 " 88	24	3	25	6	26	10½	28	9	22	1½	33	4½	35	3	21	9	23	0						
	{	89 " 90	24	9	26	0	27	4½	29	4½	32	8½	33	11½	35	10	22	3	23	6						
100	{	91 " 92	25	3	26	7½	27	10½	29	10½	33	3	34	6	36	4½	22	9	23	10½						
	{	93 " 94	25	9	27	1½	28	4½	30	4½	33	10	35	1	36	11½	23	3	24	4½						
	{	95 " 96	26	3	27	7½	28	10½	30	10½	34	5	35	8	37	6½	23	9	24	10½						
	{	97 " 98	26	10½	28	3	29	9	31	11	35	7	36	11½	38	11½	24	1½	25	6						
	{	99 " 100	27	4½	28	9	30	3	32	5	36	1½	37	6	39	6½	24	7½	26	0						

HUDDERSFIELD WOOLLEN MANUFACTURERS' AND SPINNERS' ASSOCIATION.

WEAVER'S SCALE.

The following scale for 18 strings of 10 feet per string has been compiled by the above Association.

In shawls not more than three shuttles will be paid for.

Up to 30 picks on warps of only one cut long, 6d. extra will be allowed.

From 30 to 60 picks on warps of only one cut long, 9d. extra will be allowed.

Above 60 picks on warps of only one cut long, 1s. extra will be allowed.



In all cases one halfpenny per string to be added for every two healds over sixteen.  
Weavers working two looms will be paid 35 per cent., or 7s. in the £ less than scale.  
All damages traced to negligence will be deducted.  
No interference will be allowed with learners approved by the masters.

WOMEN—LOOMS RUNNING 70 TO 80 PICKS PER MINUTE.

Picks.		WORSTEDS, WOOLLENS, MIXTURE OR SOLID COLOURED WORSTEDS.											
		One Beam.								Two Beams.			
		Shuttles.								Shuttles.			
		1	2	3	4	2	3	4		2	3	4	
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.	
	9 & 10	3 1	3 6	4 0	4 8								
	11 " 12	3 6	4 0	4 5	5 1								
	13 " 14	4 0	4 5	4 10	5 6								
	15 " 16	4 5	4 10	5 3	5 11								
	17 " 18	4 10	5 3	5 9	6 5								
	19 " 20	5 3	5 9	6 2	6 10								
	21 " 22	5 9	6 2	6 7	7 3								
	23 " 24	6 2	6 7	7 0	7 8								
	25 " 26	6 7	7 0	7 6	8 2								
	27 " 28	7 0	7 6	7 11	8 7								
40	29 " 30	7 3	7 8	8 4	9 0								
	31 " 32	7 4½	8 1½	8 10½	10 0	9 9	10 1½	10 8					
	33 " 34	8 1½	8 10½	9 0	10 1½	10 6	11 0	11 9					
	35 " 36	8 10½	9 0	9 6	10 10½	11 0	11 6	12 3					
	37 " 38	9 1½	10 0	9 10½	10 11½	11 6	12 0	12 9					
	39 " 40	9 3	10 1½	11 0	11 8½	12 0	12 6	13 3					
	41 " 42	10 0	10 9½	11 1½	12 5½	12 6	13 0	13 9					
	43 " 44	10 3	11 3	11 7½	13 1½	13 3	13 10½	14 9½					
	45 " 46	11 0	11 4½	12 4½	13 3	13 9	14 4½	15 3½					
	47 " 48	11 1½	12 1½	13 1½	14 0	14 3	14 10½	15 9½					
50	49 " 50	11 4½	12 6	13 3	14 8½	14 9	15 4½	16 3½					
	51 " 52	12 1½	12 7½	13 9	14 10	15 3	15 10½	16 9½					
	53 " 54	12 10½	13 4½	14 6	15 7½	16 0	16 9	17 10½					
	55 " 56	13 0	14 1½	14 7½	16 4	16 6	17 3	18 4½					
	57 " 58	13 3	14 6	15 2½	17 0	17 0	17 9	18 10½					
	59 " 50	14 0	14 7½	15 10½	17 1½	17 6	18 3	19 4½					
	61 " 62	14 9	15 4½	16 7½	17 10½	18 0	18 9	19 10½					
	63 " 64	15 0	15 9	16 10½	18 7	18 6	19 3	20 4½					
	65 " 66	15 1½	16 6	17 3	18 8½	19 3	20 1½	21 5					
	67 " 68	15 10½	16 7½	18 0	19 5½	19 9	20 7½	21 11					
70	69 " 70	16 1½	17 0	18 6	20 1½	20 3	21 1½	22 5					
	71 " 72	16 10½	17 9	18 7½	20 3	20 9	21 7½	22 11					
	73 " 74	17 0	18 6	19 4½	21 0	21 3	22 1½	23 5					
	75 " 76	17 9	18 7½	20 1½	21 9	22 0	23 0	24 6					
	77 " 78	18 0	19 0	20 7½	22 5½	22 6	23 6	25 0					
	79 " 80	18 9	19 9½	20 9	22 7	23 0	24 0	25 6					
	81 " 82	18 10½	20 6	21 6	23 4	23 6	24 6	26 0					
	83 " 84	19 1½	20 9	22 0	24 0	24 0	25 0	26 6					
	85 " 86	19 10½	21 0	22 1½	24 1½	24 6	25 6	27 0					
	87 " 88	20 7½	21 9	22 10½	24 10½	25 3	26 4½	28 0½					
90	89 " 90	20 10½	22 0½	23 4½	25 7	25 9	26 10½	28 6½					
	91 " 92	21 0	22 3	24 1½	25 8½	26 3	27 4½	29 0½					
	93 " 94	21 9	23 0	24 3	26 5½	26 9	27 10½	29 6½					
	95 " 96	22 6	23 9	25 0	27 2½	27 3	28 4½	30 0½					
	97 " 98	22 7½	24 1½	25 6	27 10½	28 0	29 3	31 1½					
	99 " 100	22 10½	24 3	26 3	28 0	28 6	29 9	31 7½					



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WOMEN—LOOMS RUNNING 70 TO 80 PICKS PER MINUTE—Continued.

Picks.	COLOURED WORSTEDS.								SINGLE WHITE WORSTEDS.			
	One Beam.								Two Beams.			
	Shuttles.								Shuttles.			
	1	2	3	4	2	3	4	1	2	1	2	3
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
40	31 & 32	8 1½	8 10½	9 0	10 1½	10 10½	11 3	11 9½	7 3	7 4½	8 1½	8 10½
	33 " 34	8 10½	9 0	9 6	10 10½	12 0	12 6	13 3	7 4½	8 1½	8 10½	9 1½
	35 " 36	9 0	9 6	10 6	11 0	12 6	13 0	13 9	8 1½	8 3	9 1½	9 3
	37 " 38	10 0	10 10½	11 1½	11 9½	13 0	13 6	14 3	8 3	9 0	9 3	10 0
	39 " 40	10 1½	11 0	11 3	12 6½	13 6	14 0	14 9	9 0	9 3	10 0	10 3
50	41 " 42	10 9½	11 1½	12 0	12 8	14 0	14 6	15 3	9 1½	10 0	10 3	11 0
	43 " 44	11 3	11 7½	12 7½	13 6	15 1½	15 9	16 8	9 3	10 0	10 3	11 0
	45 " 46	11 4½	12 4½	12 9	14 3	15 7½	16 3	17 2	10 0	10 3	11 0	11 3
	47 " 48	12 1½	13 1½	13 6	15 0	16 1½	16 9	17 8	10 9	11 1½	11 3	12 0
	49 " 50	12 6	13 3	14 1½	15 2	16 7½	17 3	18 2	10 10½	11 4½	12 0	12 3
60	51 " 52	12 7½	13 9	14 10½	15 11	17 1½	17 9	18 8	11 0	12 1½	12 3	13 0
	53 " 54	13 4½	14 6	15 0	16 8	18 3	19 0	20 1½	11 9	12 10½	13 0	13 3
	55 " 56	14 1½	14 7½	15 9	16 9	18 9	19 6	20 7½	12 6	13 0	13 3	14 0
	57 " 58	14 6	15 2½	16 4½	17 3½	19 3	20 0	21 1½	12 7½	13 3	14 0	14 3
	59 " 60	14 7½	15 10½	16 6	18 4½	19 9	20 6	21 7½	12 9	14 0	14 3	15 0
70	61 " 62	15 4½	16 7½	17 3	18 6½	20 3	21 0	22 1½	13 6	14 9	15 0	15 3
	63 " 64	15 9	16 10½	17 10½	19 3½	20 9	21 6	22 7½	13 7½	15 0	15 3	16 0
	65 " 66	16 6	17 3	18 7½	20 0½	21 10½	22 9	24 0½	14 4½	15 1½	15 3	16 6
	67 " 68	16 7½	18 0	18 9	20 2	22 4½	23 3	24 6½	14 6	15 10	16 0	16 3
	69 " 70	17 0	18 6	19 4½	21 0	22 10½	23 9	25 0½	14 7½	16 1	16 3	17 0
80	71 " 72	17 9	18 7½	20 1½	21 9	23 4½	24 3	25 6½	15 4½	16 10	17 0	17 3
	73 " 74	18 6	19 4½	20 3	22 6	23 10½	24 9	26 0½	16 1½	17 0	17 3	18 0
	75 " 76	18 7½	20 1½	21 0	22 7½	25 0	26 0	27 6	16 10½	17 9	18 0	18 3
	77 " 78	19 0	20 7½	21 7½	23 5	25 6	26 6	28 0	17 0	18 0	18 3	19 0
	79 " 80	19 9½	20 9	22 4½	24 2	26 0	27 0	28 6	17 1½	18 9	18 3	19 6
90	81 " 82	20 6	21 6	22 6	24 3½	26 6	27 6	29 0	17 10½	18 10½	19 1½	20 0
	83 " 84	20 9	22 0	23 1½	25 1½	27 0	28 0	29 6	18 0	19 1½	20 0	20 3
	85 " 86	21 0	22 1½	23 10½	25 10½	27 6	28 6	30 0	18 9	19 10½	20 3	20 6
	87 " 88	21 9	22 10½	24 0	26 0	28 7½	29 9	31 5	18 10½	20 7½	20 6	21 0
	89 " 90	22 0½	23 4½	24 7½	28 9½	29 1½	30 3	31 11	19 0	20 10½	21 0	21 3
100	91 " 92	22 3	24 1½	25 4½	27 6½	29 7½	30 9	32 5	19 9	21 0	21 3	21 6
	93 " 94	23 0	24 3	26 1½	28 3½	30 1½	31 3	32 11	20 6	21 9	21 3	21 6
	95 " 96	23 9	25 0	26 3	28 5	30 7½	31 9	33 5	20 7½	22 6	21 3	21 6
	97 " 98	24 1½	25 6	26 10½	29 3	31 9	33 0	34 10½	20 9	22 9	21 3	21 6
	99 " 100	24 3	26 3	27 7½	30 0	32 3	33 6	35 4½	21 6	22 10½	21 3	21 6







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*Figured Mohairs*—Not over 50 in. wide, 50 yds. long, and 20 lbs., dyeing black, 5s. 6d. per piece.  
*Linings and Italians*—Not over 60 in. wide, 50 yds. long, and 28 lbs., (grey) dyeing black, 7s. per piece.

*Finishing and Degumming Plain Silks*—  
27 in. wide = 1¼d. per yard.  
28 to 36 in. " = 1½d. "

*Finishing and Degumming Brocades*—  
27 in. wide = ¾d. per yard.  
28 to 36 in. " = 1d. "

Estimates showing the ratio that labour bears to materials and other charges in different manufacturing centres in Yorkshire.

Estimate No. 1, Manufacturer of Beavers and Meltons.

Sample No.	2, Ind. wool dyed beaver.....	26 oz.	54 in.	Labour	25%
"	No. 53, Ind. " melton..	31 oz.	56 in.	"	25%
"	No. 46, Ind. " carriage cloth.....	20 oz.	56 in.	"	30%
"	No. 109, Ind. pilot... ..	32 oz.	56 in.	"	25%
"	No. 103, S. pilot.....	36 oz.	36 in.	"	25%
"	No. 78, Piece dyed super (any colour).....	19 oz.	56 in.	"	33%
"	No. 141, Ind. worsted.....	20 oz.	56 in.	"	33%
"	No. 38, Worsted warp and woollen weft.....	10 oz.	30 in.	"	30%

Estimate No. 2. From B. D. Manufacturer.

	Total costs.			Labour costs		
	£	s.	d.	£	s.	d.
28 Whartons of 6 lbs. each at 1s. 10½d. (stock).....	2	12	6			
Carding and Spinning at 8d.....		18	8		15	8
Warping. ....		3	..		3	..
Weaving 85 yards 24 picks ..		8	..		8	..
Mill charges.....		6	..		..	..
Fulling and Milling... ..		4	..		4	..
Furnishing, Carriage, Wrapping, Discount, &c.....		4	..		3	..
	4	16	2	1	13	8
Labour costs, say 35 per cent.....	1	13	8			
Material and other charges, 65 per cent.....	3	2	6			

Estimate No. 3. From W. Manufacturers.

80 yards of Material costing 1s. 6d. per yard. Total cost £6.

	Material.	Labour.	Fixed charges &c.	Total.
Average cost :.....	£2 10s. ..	£2. 5s. ..	£1. 5s. ..	£6.
Say,.....	41.66%	37.50%	20.84%.	

Estimate No. 4 B. Manufacturer.

Where warp and weft are purchased, and dyeing and finishing done outside,

	s.	d.
Warp.....	14	8
Weft.....	17	6
Dyeing.....	5	..
Wages.....	6	4
Fixed charges-... ..	3	6
Total cost.....	£2	7

Estimate No. 5, from B. Spinner, T. A. & S.

Actual Cost of Combing and Spinning.

1. White English Wools, say from ½s to ⅔s ..

5d. to 8d.
2. White Botany Wools, say from ⅔s to ⅔s.....

6d. to 9d.
- 49% of total cost represents labour.



ESTIMATION OF COST OF MATERIALS AND LABOUR IN PIECE OF BOTANY TWILL (STANDARD MAKE).

Particulars :—Warp  $\frac{2}{40}$  s Botany, 60's quality, 64 threads, per in.  
Weft  $\frac{1}{20}$  s Botany, 60's quality, 64 threads, per in.  
Length of Warp ; 70 yards ; Finished Cloth, 60 yards.  
Width of piece ; 66 inches ; width of finished piece, 56 inches.

1.	Value of piece in finished state :.....	£9.	19s.	10d.	
	Less profit represented, 60 yards at 2d .....		10s.	0d.	
	Actual cost of finished piece.....	£9.	9s.	10d.	= \$46.19.
			£	s.	d.
(a).	Cost of finishing ; Labour 50%.....			8	4
	Machinery 50% .....			8	4
(b).	Cost of warping, dressing, weaving, etc. :				
	Labour 66 $\frac{1}{3}$ %.....			15	4
	Machinery 33 $\frac{1}{3}$ %.....			7	8
(c).	Quantity and cost of yarn in grey piece :				
	Total 53 lbs.—26 $\frac{1}{2}$ lbs. at 2s. 11d. (Warp).....		3	17	3 $\frac{1}{2}$
	26 $\frac{1}{2}$ lbs. at 2s. 6d. (Weft).....		3	12	10 $\frac{1}{2}$
			9	9	10
2.	Value of Yarn as delivered to Manufacturer :	£	s.	d.	
	53 lbs. average price 2s. 10d.....	7	10	2	
	Loss profit represented, 53 lbs. at 9s. 10d. (approximate).....		4	2	
	Actual cost of yarn.....	7	6	0	
(a).	Cost of spinning—53 lbs. at 4d		£	s.	d.
	Labour 70%.....			12	4
	Machinery 30%.....			5	4
(b).	Quantity and cost of top for spinning :				
	55 lbs. (5% allowance for waste) at 28d. ....		6	8	4
			7	6	0
3.	Value of top as delivered to spinner ;.....	£	s.	d.	
	Less profit represented—53 lbs. at 4s. 5d.....	6	8	4	
			3	11 $\frac{1}{4}$	
		6	4	4 $\frac{3}{4}$	
(a).	Cost of combing—55 lbs. at 2 $\frac{1}{4}$ d,		£	s.	d.
	Labour 66%.....			6	9 $\frac{1}{2}$
	Machinery 33% .....			3	5 $\frac{1}{4}$
(b).	Quantity and cost of wool for combing—				
	137 lbs. greasy wool (required to yield 55 lbs. scoured wool top), price 10d. ....		5	14	2
			6	4	4 $\frac{3}{4}$

TOTAL LABOUR COSTS.

	£	s.	d.
Finishing labour.....	0	8	4
Dressing " .....	0	15	4
Spinning " .....	0	12	4
Combing " .....	0	6	9 $\frac{1}{2}$
	£2	2	9 $\frac{1}{2}$ = \$10.41

Total cost of 60 yds. of finished cloth, £9 9s. 10d. = \$46.19.

Labour.....	= 22.5%	of total cost.
Wool .....	= 60.1%	" "
Other costs.....	= 17.4%	" "



## SESSIONAL PAPER No. 87

In order to make a comparison between cost of manufacturing in Canada and in Great Britain, it would, in my opinion, be necessary to take into account the following items, viz. :—

- 1st.—Wages ;
- 2nd.—More expensive factory buildings owing to rigorous climate ;
- 3rd.—Extra cost of heating same ;
- 4th.—Additional buildings required for storing large quantities of raw material ;
- 5th.—Extra capital employed in carrying larger stocks, owing to being far removed from the base of supply, and also that mills are practically compelled by local market conditions to purchase twelve months' supply of Canadian wools after shearing season ;
- 6th.—Higher rate of interest on money employed ;
- 7th.—Increased cost of machinery ;
- 8th.—More expensive motive power owing to higher prices for fuel ;
- 9th.—Owing to Canadian mills having a limited market, they are compelled to show a large number of designs each season and manufacture from comparatively short warps, which interferes with production and increases cost ;
- 10th.—The specialization which is so general in Yorkshire has many advantages in lowering the cost of production, and also enables manufacturers in England to do a large volume of business on a comparatively small capital, which is not possible in Canada.

Your obedient servant,

THOMAS COSTELLO.



